essential operators in implementing strategic action plans to practice.

Conclusions Strong collaboration and communication is needed in order to decrease the home and leisure injuries. The aim is to increase the discussion about the possibilities in preventing the injuries.

409 USING RAI-HC ASSESSMENT INSTRUMENT TO CLASSIFY HOME CARE CLIENTS IN FINLAND BASED ON FIRE EMERGENCY EVACUATION CAPACITY

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Background When an uncontrollable fire is detected in a building there may be a 2–3 minutes window for the occupants to move to safety. Poor physical function and cognition may become critical factors in an evacuation situation. In this study a novel functional scale measuring emergency evacuation capacity of home care clients is presented.

Methods A fire security expert visited about 250 home care clients assessing their evacuation capacities. For the evacuation capacity three categories were used: 1) is able to evacuate; 2) may be able; 3) unable to evacuate. This data was linked to comprehensive assessments of clients functional and health status performed by home care nurses using the interRAI Home Care Assessment Instrument (RAI-HC). The goal was to investigate whether the evacuation capacity classification can be explained in terms of RAI-HC variables. As the mathematical method we have employed "classification and regression trees" (CART).

Results A fire evacuation capacity scale "EVAC" was developed using four levels of cognitive function as major categories. These categories were split into final groups based on performance in physical function. For each group we calculated the average capacity score ranging from 0 to 1 based on the dependent variable.

Conclusions The evacuation scale gives an estimate of a client's ability to get out in case of a fire. The scale can be used to single out high risk persons for which compensatory safety technology may be required. The scale could reduce costs in assessing evacuation capacity of home care clients.

410 MOTORCYCLE TYPE, FAMILARITY AND RIDER AGE: A CONDITINAL PROCESS ANALYSIS

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Background Motorcyclists are vulnerable road users and with increasing registrations, the number of motorcyclists killed and injured continues to rise. Commonly reported risk factors for crash involvement include the type of motorcycle, the rider's familiarity with the motorcycle and rider age. However, identifying potential risk factors is only the first step. To develop effective interventions, there is a need to understand how risk factors work together. This paper aims to examine the relationship between the type of motorcycle, the rider's familiarity with the motorcycle and rider age as risk factors for crash involvement using a case control sample and conditional process analysis.

Methods A case control sample consisting of 100 seriously injured motorcyclists and 500 controls was collected in NSW, Australia between 2012 and 2014 using in-depth crash investigation and survey. Condiitonal process analysis was used to test a moderated mediation effect of key risk factors; motorcycle type (sports motercycle versus other), rider familiarity with the motorcycle (km ridden on the motorcycle) and rider age (years) on crash involvement while controlling for gender and most common type of riding (recreation versus other). This was acheived using the PROCESS macro in SAS that implements a series of regression analyses to estimate direct and indirect effects of the risk factors and interactions, as well as testing the significance of these effects.

Results Riders of sports motorcycles were more likely to be in the crash sample than those riding other types of motorcycles, however this effect is mediated by the rider's familiarity with motorcycle. Furthermore, this indirect effect is moderated by rider age, with the effect being more pronounced in older riders.

Conclusions This analysis provides the first insight into how commonly reported risk factors related to motorcycle type, familiarity with a motorcycle and rider age work together. Specifically, this analysis identifies high priority targets for interventions aimed at mitigating crash risk through these risk factors.

Fire Safety and Burn Injuries

Post Mon 1.3

411 BURDEN OF FIRE-RELATED INJURIES IN FINLAND

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Background The aim of this research was to examine the burden of (severe) fire-related injuries in Finland.

Methods All together twelve separate data sets were gathered for conducting the study. Finnish Hospital Discharge register (FHDR) was the core data in which the injured persons could be identified. The Causes of Death register was the data to identify fire-related deaths. Criteria of inclusion for further study were that a person had been to inpatient care or died. Data on sickness allowances, different kinds of rehabilitation funding, (disability) pensions were obtained from the Social Insurance Institution of Finland. Other types of disability allowances or pensions were obtained from the Finnish Centre for Pensions. Causes of Death data supplemented with socioeconomic data were obtained from Statistics Finland. A data from Statutory Accident Insurance was obtained to cover work-related accidents. A five-year sample of patients with fire-related burn was obtained from the Helsinki Burn Centre. The Finnish Hospital Discharge Register was available at the National Institute for Health and Welfare, Finland. The whole study consisted of five sub-studies published in scientific journals.

Results Quality, usability and some methodological issues of using the FHDR were resolved. A descriptive epidemiological study on the injuries nationwide was conducted. Inpatient care costs were approximated nationwide. Indirect burden of fire-related deaths

was reported. Finally, indirect costs and benefits of fire-related injuries were studied.

Conclusions Conducting an incidence-based cost of illness study requires detailed person-level data. Due to multiple sources and raw data being administrative on nature makes the research burdensome. Annually on average direct and indirect costs exceed EUR 40 million (population 5.4 million). Majority of the costs are indirect.

412 COOL RUNNINGS: A NOVEL APPROACH TO PREVENTING HOT BEVERAGE SCALDS IN YOUNG CHILDREN

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Background Burn injuries are common in young children, and one of the leading causes is hot beverage scalds. Innovative new technologies such as Smartphone applications (apps) present a novel way for delivering individual-level behaviour change messages. When combined with gamification (using game techniques in a non-game context), app-based interventions can engage and influence people's beliefs, attitudes and behaviours. Gamification has not been applied to injury prevention. The aim of this study was to develop a gamified app-based intervention to prevent hot beverage scalds in young children.

Methods Randomised control trial. Participants recruited online via targeted social media advertisements. Inclusion criteria: mothers aged 18+ with at least one child aged 5–12 months at time of recruitment, who own a Smartphone, and live in Queensland, Australia. Both groups complete a pre-test questionnaire to determine knowledge of hot beverage scald risks and burn first aid knowledge. Participants in the intervention group receive fortnightly messages (infographic or video) about hot drink scald risk factors and burn first aid treatment, and are incentivised with points and rewards/prizes. The control group receive three burn/first aid infographics without incentives. After intervention period participants from both groups complete a post-test questionnaire.

Results The six-month intervention period will finish in July 2016. The anticipated sample size is 480 (240 intervention/240 control). Intervention effectiveness will be assessed using regression models adjusting for baseline values. Preliminary results will be presented.

Conclusions Given the success of gamified app-based interventions for chronic disease management, smoking cessation, and physical activity, it is hoped this novel approach to injury prevention will be equally successful. The low cost, scalability and broad reach make this approach an ideal channel for future injury prevention efforts.

413 REACH OUT (I'LL BE THERE). RECEIVE-FOCUSED BEST PRACTICES FOR EFFECTIVE FIRE SAFETY CAMPAIGNS

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Background General public need to have basic knowledge about risks by potentially reducing the likelihood of future incidents. In order to prevent accidents and even loss of life there is fire safety campaigns The objective is that the messages will give information so that the people can protect themselves and their nearest and dearest. In an effort to understand better how to make risk messages more accessible and effective the campaigns are regularly evaluated by using performance indicator.

Methods The purpose of this study is to investigate how to design an efficient fire safety campaign. Resent Finnish fire safety campaigns will be analysed by using an empirically tested model of efficient risk communication. By using the IDEA-model as an analytical tool we can find efficient risk messages. Furthermore, we will identify the weaknesses of the messages related to the behavioural intentions they will create.

Results The hypothesis of this research is that instructional risk messages will aim higher degrees of self-efficacy and behavioural intention to take appropriate action. Instructions for self-protection and focusing on receiver-oriented strategies will increase comprehension, garner desired response, and produce appropriate self-protective action..

Conclusions Official risk communicators engaged with publics, and there is ongoing interest on how such communication could be most effective, with initial questions focused on message creation but expanding to query how audiences process and act on messages. Message receiver –oriented approach is needed instead of organisation-oriented when planning the campaigns. Hence, effective fire security campaigns must be evaluated based on accurate receiver interpretations and behavioural intentions.

414 FIRE-RELATED MORTALITY IN SWEDEN-TEMPORAL TRENDS 1952–2013

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Background The zero vision, declares that no one in Sweden should die or be seriously injured in fire-related incidents. In order to potentially reach this goal, historical trends are important to study to understand prevailing trends and emerging risk groups.

Methods This study examines temporal trends in deaths due to fire-related accidents in Sweden from1952 to 2013 based on statistics in the Cause of Death register held by the Swedish National Board of Health and Welfare. Fatalities coded with underlying cause of death associated with fire-related accidents are included and absolute numbers and age-adjusted mortality rates are calculated and statistically analysed for trends using Poisson regression.

Results We observed a significant reduction in both absolute numbers and in the age-adjusted mortality rate with a decline in absolute number of deaths of 34% over the period. However, the elderly population (80+ years) showed a significant increase in absolute numbers. Regarding the age-adjusted mortality rate, a significant reduction of 63% was observed and children aged 0–4 years showed the largest decrease (91%). A reduction was seen both in terms of fatalities due to burns and carbon monoxide poisoning, although the reduction was more pronounced with regards to burns (69% compared to 46%).

Conclusions Although an overall decrease was observed in both absolute numbers and in the

age-adjusted mortality rate, with an ageing population, the absolute numbers of fire-related deaths for the elderly population will most likely increase in the future. Therefore, whilst previously a child-injury issue, fire-related deaths in Sweden is now